

Claims

1. A method for providing antimicrobial properties to a composite item, comprising: immersing a composite item in an aqueous bath comprising an organic antimicrobial agent;

5 separating the immersed composite item from the bath; and
drying the separated composite item,

wherein the composite item is a member selected from the group consisting of composite yarns, composite fabrics and composite articles.

10 2. The method of claim 1, further comprising the step of reusing the bath in a further immersing step on a different composite item.

3. The method of claim 1, wherein said composite item is a composite yarn.

15 4. The method of claim 1, wherein said composite item is a composite fabric.

5. The method of claim 1, wherein said composite item is a composite article.

20 6. The method of claim 5, wherein said composite article is a member selected from the group consisting of gloves, aprons, socks, filters, shirts, pants, undergarments, and one-piece jumpsuits.

7. The method of claim 3, wherein said process is a continuous process.

25 8. The method of claim 3, wherein said process is a batch process and said composite yarn is in a form of composite yarn wound on a bobbin.

9. The method of claim 4, wherein said process is a continuous process.

30 10. The method of claim 4, wherein said process is a batch process and said composite fabric is in a form of composite fabric wound on a roll.

11. The method of claim 1, wherein said organic antimicrobial agent is present in said bath in an amount of from 0.1-2 % by weight of the total bath.

5 12. The method of claim 1, wherein said organic antimicrobial agent is a silicone based quaternary ammonium salt.

10 13. The method of claim 12, wherein said silicone based quaternary ammonium salt is a copolymer of a long chain (C₁₂-C₂₀) alkyldimethylaminotrihydroxysilylpropyl ammonium halide and a chloroalkyltrihydroxysilane.

15 14. The method of claim 12, wherein said silicone based quaternary ammonium salt is a copolymer of octadecylaminodimethyltrihydroxysilylpropyl ammonium chloride and chloropropyltrihydroxysilane.

16 15. The method of claim 5, wherein said immersing step is performed in a household clothes washer and said drying step is performed in a household clothes dryer.

20 16. The method of claim 1, wherein said drying step is performed at a temperature of from 50-100°C.

17. The method of claim 1, wherein said drying step is performed at a temperature of from 70-90°C.

25 18. A composite item selected from the group consisting of composite yarns, composite fabrics and composite articles, having antimicrobial properties and prepared by the method of claim 1.